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A LETTER ON

**THE CHOLERA**

As it occurred in Cincinnati, Ohio, in October 1832.

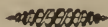
ADDRESSED TO DR. SHORT OF LEXINGTON, KY.

By **JOHN F. HENRY, M. D.**

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## LETTER, &c.



CINCINNATI, Nov. 13th, 1832.

MY DEAR SIR:

YOUR note, informing me that Cholera had appeared in Lexington, has been received, and I embrace the earliest leisure to answer its inquiries. I cannot, however, suppose, that you will have much of the disease. Believing that its cause is identical with that of intermitting, remitting and malignant fevers, I can see nothing, in the medical topography of your highly favored city, to create a fear that it will be epidemic, or that you will even have many sporadic cases.

On the subject of this identity of cause, I hope you will indulge me in the statement of a few facts, and the deductions which flow from them, before I enter upon the immediate object of your inquiry—the “*treatment of the malady.*” I make no pretensions to a knowledge of the nature of that influence which produces disease, whether epidemic or endemic; nor can any good result from any opinion which, in the present state of science, we may entertain on this subject. Whether it be malarious, or animalcular, or neither, is to me, at this time, a matter of little concern. With this confession of ignorance, I nevertheless contend, that cholera and autumnal diseases have the same origin; delight in the

same localities; advance *pari passu*; exhibit many of the same symptoms; and are cured by the same remedies.

Heat, moisture and decomposing vegetable matter, are the three essential ingredients in the production of autumnal diseases; and according to the concentrated condition of these agents, and the susceptibility of individuals exposed to their influence, we have simple biliary derangements—or some form of fever—or of intestinal irritation—or finally, cholera itself. But you will ask me, why we should, *this year*, have been devastated by cholera, when ordinarily, our diseases have been of a character so much less violent? The answer to this question involves the whole subject of the local origin of this disease; and my remarks may be conveniently arranged under three heads. 1st. *The flood, of February last.* 2nd. *The temperature of the year, commencing in November 1831 and ending in the early part of this present month.* 3rd. *The alterations which have been made in the city during this year, and the local and domestic sources of disease.*

1st. *The flood.*—The snow which had been accumulating during November, December and January, was dissolved by the rains which fell in the latter part of January and the early part of February; and from the 12th to the 21st of the last named month, we had a flood of unexampled elevation and magnitude. It covered the whole bottom; the margin of the high water reaching to the Lower-market and Pearl streets, and widening, as you descend, until the western parts of Third, Fourth and Fifth streets were embraced in its sweep. Ascending the ravine of Deer creek, we found it above a line drawn parallel with the court-house, a distance, by the meanders of the stream, of more than a mile; and ascending Mill creek, which you know skirts the western parts of the city, we found it reaching a point four or five miles beyond the corporation line, and spreading over a valley of from a quarter of a mile to two miles in breadth. The brick ponds in this neighborhood, and the cellars and low places in the city, were necessarily filled, and that saturation of the earth took place, which has been found elsewhere so

prejudicial to health. It was a long time before many of the cellars became fit for use, notwithstanding the efforts that were generally made to dry and cleanse and purify them. I noticed some that were not emptied of the water until July, and others that had an abundance of wet earth in them so late as September. The miasms from these cellars and low places were particularly offensive after night. Had this flood occurred in May, or June, or July, all eyes would have been directed to it, as the probable source of disease, and I can readily conceive, that by filling the cellars and low places, and saturating the whole substratum of the submerged portions of the city, it may have laid the foundation for our subsequent maladies. In our estimate of the influence of the inundation, it should also be remembered, that a deposite of mud and sand, and vegetable mould, was left exposed to the action of the sun, upon the recession of the waters, that added greatly to the sources of pestilence, that I am endeavouring to develope. •

2nd. Under the head of *temperature*, all that relates to the weather shall be embraced.—*The year has been remarkable in almost every respect.* The annunciation of this fact may astonish those who have not derived their opinions from accurate and unerring sources. Our sensations are apt to deceive us in relation to the weather. The statements I make on this subject, are drawn from a register of temperature, &c. kept by my friend, the Rev. C. B. McKee, who has kindly permitted me to use it. From this record, made carefully by a man of science, and with a good instrument exposed to the open air, on the north side of a brick wall, I have arrived at all the facts, which I state in reference to the past year. *The winter was colder and the summer range higher than has ever been known at this place.* Dr. Drake, in his “Picture of Cincinnati,” states that the mercury falls below zero twice every winter, and, on an average, rises above 90° fourteen times every summer. But last winter it fell to zero once, and below it six times, viz. 12th of December, —2°; 15th, —7°; 25th January, —2°, at 9 o’clock, P. M. —9°; 26th,

—11°; 27th, —2°; and during the summer it rose above 90° as many as thirty-six times—once in May—fifteen times in June—twelve in July—and eight in August;—a result rendered more extraordinary, by the additional fact, that whereas 98° was the highest degree of heat indicated in this place, when Dr. Drake's book was published, the mercury rose during the past summer to 99° twice; once on the 16th of June, and again on the 1st of July. It rose to 98° three times—on the 17th of June, and on the 3rd and 7th of July: and four times to 97°—June 11th, July 2nd, 5th and 6th.

The *average* temperature of each month was less in November and December, and greater in each of the other months, than has ever been known here. Of November, I speak from recollection alone: but in December the average was less by 10° than that given by Dr. Drake, as the result of several years observation. The following table will enable you, at a glance, to observe the remarkable difference between this year, and the average of several years.

	1832.		Dr. Drake's average.		Difference.
January,	35.50	- - -	29.88	- - -	5.62
February,	42.50	- - -	34.42	- - -	8.08
March,	54.50	- - -	43.97	- - -	10.53
April,	64.50	- - -	57.58	- - -	6.92
May,	79.50	- - -	61.32	- - -	18.18
June,	86.50	- - -	71.16	- - -	15.34
July,	87.	- - -	74.51	- - -	12.49
August,	82.50	- - -	73.23	- - -	9.27
September,	75.	- - -	68.25	- - -	6.75
October,	70.	- - -	55.08	- - -	14.92

From which you observe, that September was warmer than August ordinarily is, and October warmer than September in common years; and that the average heat for the whole ten months was greater by 10.81 degrees than is common at this place.

The *diurnal variations* from cold to heat, and from heat to

cold, were on an average several degrees less than those ascertained by Dr. Drake. I pass over a monthly comparison, and come to the general result, which is as follows: From cold to heat (Dr. D.) 29.32: for the year 1832, 18° From heat to cold, (according to Dr. D.) 28.37: for 1832, 25°—From which we learn, that the temperature was not merely a high one, but that it continued, on an average, with fewer and less changes, from day to day, than common.

The average of the difference, between the coldest and hottest part of each day, from December to October, shows a higher range for the whole time, compared with that authority which I have assumed as the standard, the "Picture of Cincinnati," so often quoted; but if the months be compared, the difference was greater for December, March, May, July and October, and less for the other six months.

The monthly extremes and ranges differed exceedingly from those given by Dr. D., but I will not trouble you with an array of figures: the result is, that for December, January, February and March, the mercury fell below the point indicated by the Doctor; whereas it did not rise above his statement in either of those months, except March, and then by a single degree. While in all the other months it never fell so low, and always rose above the Doctor's book, except in September and October.

From all which, it results, that the extremes of cold in winter, and heat in summer, were greater than ordinary: that they occurred more frequently, and continued for a longer period: that with the exception of November and December, the average heat of each month was greater: that between the coldest and hottest part of each day, there were more degrees on an average for May, July and October, and less for the other warm months; and that comparing one day with another, the changes were less; that is, the weather was more uniformly of the same temperature. This approximates our warm season to that of India, in which, the nights are cool, and the days oppressive; and, preceded by a cold winter, our population was made more susceptible of the in-



fluence of heat; just as an inhabitant of Louisiana, who spends a winter in the north, is unacclimated, however long he may have previously borne the heats of the south.

I have no data which enable me to make positive statements in reference to the monthly fall of rain. The flood is conclusive evidence in reference to the month of February. March was dry, three snows and two gentle showers being the only interruptions to serene, clear weather, which this proverbially changeable month underwent. April, on the contrary, had fourteen rainy days: so had May; while in June and July there were only four light showers, in each month, to mitigate the excessive heat which then prevailed. In August there were three days of heavy rain, about the middle of the month, which reduced the mercury from 94.° to 73.°, besides two other days of moderate rain. In September there were seven rainy days; and in October nine, viz. 6th, 8th, 9th and 10th, under which the mercury continued to range from 64.° to 75.°

From this summary of the weather, which I have made as brief as possible, it appears that March was dry; April and May wet; June and July dry; August again was wet; September was seasonable merely; and in October there were four days of hard rain, the two last of which, 9th and 10th, were a continued and incessant pouring.

I have found but one notice of thunder and lightning during the whole warm season, viz. on the 4th day of August.

Fogs began in August. They became more dense and heavy in September, and in October they were rarely absent, except when it rained, until frost appeared, which was on the 24th, 25th, 26th, 28th and 31st.

As indicating a singular departure from ordinary years, it deserves to be recorded, that mosquitoes did not pay their annual visitation until the middle of August, a month or six weeks later than common; house flies were rare during the whole season; and about four weeks before the epidemic commenced, I observed them adhering to the walls and posts in a torpid and dying condition. This was the only premo-



dition which the animal kingdom presented of the threatened pestilence, if we except the poor and lean and lank condition of the poultry brought to our market—a condition which no process of feeding and care could, to any extent, remove.

3rd. The alterations and improvements which have been made during the present year, are not, perhaps, greatly different from those which have been effected in preceding years; but owing to the high temperature of the summer, there can be no question of their deleterious influence. They have consisted in the alterations of the grading of many of the streets, and particularly of some of those which run to the river, viz. Main, Walnut and Vine; the elevation of Columbia, from Sycamore to Walnut; and the establishment of a *sewer*, from the intersection of Columbia and Main, so as to discharge directly into the river, at the lower end of the wharf, the waters which heretofore have found their way along the channel of Columbia street. These changes must ultimately conduce as much to the health, as they now do, unquestionably, to the beauty and value of that part of the city. But I conceive that for this season, at least, they have been prejudicial, not merely by exposing such an amount of new earth and offal from a thousand sources to the action of the sun; but by their elevation they have converted many of the adjoining squares into the condition of basins, the common receptacles of all the water that falls and runs into them.

The grading and filling up of streets, and the construction of roads, in which much excavation is necessary, have proved highly prejudicial to the health of those who were thus employed. From what can this arise, unless it be, from the effluvia generated by the exposure of new surfaces to the action of the sun? The road hands who have, this season, been employed in constructing a road leading along the side of the hill directly north of the city, elevated many hundred feet above the level of the river, have been notoriously the subjects of the pestilence; and such I understand has been the occupation of those victims of the disease in your neighborhood.

The subject deserves a more deliberate consideration than my engagements at this time will permit.

The attempts that are making, all along the river bank, to eke out the wharf, and thus scoop an additional foot of land from the bed of the river, cannot fail, in their immediate results, to injure the health of that portion of the city; and the sinuosities left in the margin of the bank, have been, and are yet, the receptacles of every species of decaying and offensive material. The brick-yards to the west of the city, occupying the flats of Mill creek, as well as some of the more elevated ground, have been greatly extended during the present year, and they furnished no doubt their full share of the pestilential influence. The ravine of Deer creek has long been a place of deposit for shavings, refuse articles of food, and all other things which were offensive and useless. These remarks are intended for that portion at the eastern termination of Harrison, Sixth, and New streets, the only part of the border of this ravine which is densely settled, and there it is notorious that the ravages of the pestilence were frightful. An exception exists in relation to this ravine, but it is apparent merely. About sixty Germans were engaged in excavating, embanking and building locks, for the purpose of extending the canal to the river; they continued their operations during the whole period of the epidemic, and escaped without the loss of a single man. Similar exemptions have been observed elsewhere, under circumstances, which, at first view, appear to be promotive of disease. But the cause of their exemption is easily understood. *They were working below the surface of the river, in mud and water up to their ancles.* They moved among it with perfect impunity, because, *the excess of moisture prevented that decomposition which generates disease.* Similar anomalies are mentioned by Pringle, in his account of the diseases of the British Army, in the Low Countries; a *very wet year* was always accompanied with universal health; a *dry one* was the harbinger and cause of devastating pestilence. Another circumstance in relation to these Germans should be remembered: *they continued their*

occupation during the whole pestilence: their minds and bodies were employed, by which they were prevented from brooding over the calamities of human nature, and sinking into a condition of despondency.

I must not omit the condition of Columbia street below Vine. It here constitutes the common estuary of all the washings of the hill as far as Seventh street, as well as the adjoining squares in the bottom, and its condition was filthy, I will not say beyond example, but certainly to a most annoying and dangerous degree: and from Western Row to the river, a distance of three quarters of a mile, this concentrated and accumulated filth was passed off through a narrow and winding ditch, occasionally impeded by the falling in of the banks, or other obstacle. Nor must I omit the *domestic sources* of disease, which were conspicuous in most of the chosen haunts of cholera. The settled parts of the border of Deer creek are inhabited by free negroes; and in one single tenement, in which I saw one of the first cases of cholera after it became epidemic, I learned that there were about fifty souls living. The condition of such a menagerie can well be imagined. It was offensive to all my senses in a most loathsome degree. The region round about the intersection of Columbia and Plum and Western Row, which suffered greatly, and which is also inhabited by the same miserable class of people, abounded in an equal destitution of cleanliness and comfort. I need not dwell on the sources of disease in steam boats, flats and keels. They are apparent to all observers, and are to some extent perhaps inseparable from their condition. A general resort to *salting* would add to their cleanliness and sweetness, as well as enhance their durability.

I wish to call your attention for a moment to the prevalent winds of autumn, as accounting to my mind satisfactorily for the existence of a greater amount of disease in the western part of the city, on the hill, than could be traced to any local sources. Within the confines of the district to which I refer, according to the "Picture of Cincinnati," the south

western wind is the most prevalent during August, September and October, and these winds blow directly over the flats of Mill creek, and the brick ponds to which I have so frequently referred, and bear to the western parts of the city the deleterious principles which are there produced.

Nor must we overlook in this investigation the condition of streets, alleys and back yards. It is not to be disguised that all of them were occasionally very offensive, and of themselves they were sufficient to produce disease, under the influence of a hot sun.

In summing up my observations on this subject, I find that there were three remarkable deviations during this year, from the course of ordinary years:—*The severity of the winter—the flood—and the excessive heat of the summer months.* And to the combined influence of these agents I am compelled to ascribe the prevalence of cholera in the epidemic form. Had the temperature of the summer months been less than it was, it is possible the effects of the flood would have ceased with the subsidence of the waters. It is certain that the other sources of disease I have pointed out would have produced, as in other years, merely an augmentation of common diseases. Had, however, all these sources of disease been removed, and the city rendered clean and sweet in all its length and breadth, the inference to my mind is irresistible that the epidemic would have passed by us as lightly as it did in Philadelphia or Boston.

You observe I do not present in the foreground *intemperance* as one of the causes of cholera, because nothing could be more untrue in reference to this city, than the insinuation, that none but the intemperate fell victims to its ravages; nor even if they constituted, as I am disposed to think they did, a majority of the sufferers, would this fact throw any light on the inquiry, why intemperance should this year produce cholera, when heretofore, it has caused maladies of another description altogether? Nor can I for one moment entertain the opinion that the disease is to be traced to eating fruit, melons, &c. My family indulged freely in all these

things, and even in green corn, until the pestilence commenced, and yet none of us suffered the least inconvenience or danger from our imprudence, as some would call it. I am utterly incredulous on this subject, because I was rarely able to trace an attack to any error in diet, either immediate or remote, and many of the most careful fell before the scourge, while some of the most reckless escaped. A poor woman told me, that her children had eaten freely of wild grapes during the whole epidemic, and yet they all escaped. I do not wish to be understood as advancing the opinion, that the pre-disposed, or the actually sick, should discard all regard to regimen, but I have no doubt that more disease resulted from abstinence and the use of innutritious food, than from indulgence.

The localities of all the deaths from cholera are not so well ascertained, as to enable me to designate with precision the ratio which belonged to the different portions of the city. Enough however is known to establish the fact, that it prevailed most in those quarters in which, under ordinary circumstances, bilious disease, in some one of its Protean shapes, has heretofore been observed. Indeed, it is confirmatory of this view of the cause of epidemic cholera, which I do not attempt to indicate further than to identify it with the cause of autumnal diseases, that, generally speaking, the fevers which run their race simultaneously with it, were found in the range of the table land, which constitutes the upper portion of the city.

But you will say, if there be physical causes of cholera, why did they not act more or less during the summer in the production of this same disease? Why should there have been such a sudden augmentation of it in the early part of October? And why should it have declined almost as rapidly as it sprang up? The answer to the first inquiry might be greatly amplified: but contenting myself with a reference to the state of the weather, and to the acknowledged fact, that physical causes do not shew their effects until some considerable time after they have acted, I go on to remark, that



intestinal irritations have been prevalent during the whole season; that I heard of two cases in April, which I believe to have been genuine cholera; that I saw an unequivocal case in May; a very severe one in June; a fatal one in July, the first I had seen; and my observation since enables me to say, that I have seen no case presenting all the symptoms more unequivocally developed. Besides this, I saw several other exceedingly bad cases, in this month, which recovered. In August I saw other cases, none of which proved fatal; but the disease in this month was not as often presented to me as in the preceding. In September, I neither saw nor heard of a case; and if I were to venture an opinion on this subject, I would ascribe it to the fact, that there was less difference between the temperature of the coldest and warmest part of the day, in this month and in August, than in July and October, compared with the average heat of those months as recorded in the "Picture of Cincinnati."

The sudden augmentation, which took place in the early part of October, is to be ascribed to the rains on the 6th, 8th, 9th, and 10th; to the cold nights and hot days which succeeded; and in part to the panic which seized upon our population, and had a decided influence in augmenting the number of victims. From this time onward, the thermometer did not more surely indicate the rise and fall of the mercury, than it did the number of cases, and the amount of deaths. Severe frosts on the 24th, 25th, 26th, 28th, and 31st, produced so decided a mitigation of the epidemic, that on the last named day, only three deaths, in private practice, were reported by the Board of health. The disease still lingered among us, however, and even at this time, new cases of exceeding violence are occasionally presented.

In conclusion, on this branch of the subject I may remark, that I observed no fact, which led me to entertain a suspicion that the disease was contagious, in any of its stages, or under any circumstances. I was with the sick, the dying and the dead, and yet I saw it communicated in no one instance.



Immediately after the 10th of October, cases occurred in every part of the city, but of every grade;—some had numbness of the extremities—others vertiginous feelings—others had merely a stiffness and immobility of the joints of the hands and feet, with pain in the bones, or on motion;—those who were more under the influence of the epidemic, had diarrhœa, or cramps, in some instances confined to the fingers and toes, and in others extending to the trunk, and implicating the hollow viscera of the abdomen:—some had all of these symptoms, with vomiting and an active pulse, and warm skin;—others had none of them but diarrhœa and vomiting, with cold extremities, cold surface, feeble pulse and disturbed respiration;—some had alvine discharges, resembling the water of the streets, or roads, after a shower;—while in others, they were observed of every colour between this and the genuine rice-water, or sero-albuminous discharge. The danger was in proportion to the approximation to this peculiar colour, and to the *absence of spasms*, when this kind of discharge existed; for these, though horrible to the bystander and agonizing to the sufferer, indicated a power of resistance to the malady, which left a hope that remedies might avail: some however, *with the spasms*, had the feeble pulse, the cold surface, the corrugated and unelastic integuments. The disease in full developement was generally preceded by the premonitory diarrhœa. This I think was the most frequent mode of attack, but it was not always the precursor. In some very violent cases there was no diarrhœa, during the whole progress of the attack. In one very remarkable case there was *no purging, or vomiting, or spasms*. He complained of a deadly intense pain in the epigastric region. His flesh was so cold, that when you grasped his arm, you had that sort of chilling sensation which is produced by touching a dead person: the surface was bathed in a profuse clammy sweat, and his pulse was very feeble, and at times almost imperceptible. He remained in this state forty-eight hours, during which, there was no discharge of urine. After this protracted cold stage, reaction commenced; the pulse

rose; the sweats became warm; the urinary secretion was re-established, and convalescence advanced slowly, though steadily. I saw three other cases in which the epidemic wore the livery of bilious cholic. There was obstinate constipation; but there were violent spasms of the intestinal tube, in one instance confined to the small intestines, and in the others involving the colon: but these cases could not be mistaken; they were but other modes in which the epidemic influence displayed its power; the same want of biliary and urinary secretion existed as in the ordinary mode of attack; and the remedies did not essentially differ from those employed in combatting the common forms of disease.

At the same time, that these forms of cholera were desolating the city, I saw bilious fevers of every grade, from mild remitting to malignant. In others, on whom the influence was less operative, there were slight biliary derangements, indicated by nausea, or simple want of appetite, and by a torpid or sluggish condition of the bowels. Others had dysenteric symptoms with or without fever: women menstruated more freely, and at irregular times: but what was very remarkable, and different, I think, from what has been observed elsewhere, I neither witnessed nor heard of any abortions during the whole period of the epidemic. Some cases that commenced as febrile attacks ran speedily into cholera; and, in my own observation, most generally into the stage of collapse; and others that commenced with all the symptoms of cholera, fell back into the milder forms of disease. There seemed to be a *scale* of danger, running as it were from simple biliary derangement to cholera in its worst form; indicated by the sudden supervention of diarrhœa, vomiting, prostration of strength, and pulselessness. This scale might be constituted in the following order; biliary derangement without fever—with fever of a mild type—of a more malignant grade—vertiginous state of the senses of seeing and hearing—numbness of the extremities—with costive bowels—with diarrhœa—with vomiting—with cramps—with strong pulse and warm skin:—with the preceding symptoms, but the pulse

weak and vacillating, the heart having no power to send the blood to the extremities, or to the surface, which were cold, clammy, corrugated, and livid or blue. Another scale might be formed, from observing the alvine discharges: where these contained the slightest admixture of bilious matter the danger was remote; and this danger was always in proportion to the thinness, on the one hand, and the approximation to the rice-water colour, on the other. All these discharges were bad—but worse in proportion as the colour became white.

Such and many more were the shades of difference which this singular epidemic assumed; but like the garments that a man puts on, they could not conceal it from any but the most superficial observers. Under some one or other of these forms of disease, almost the whole population suffered; and the suddenness of some of the early deaths created a panic, which hastened the destiny of the sick, and paralyzed the energies of the well. Many fled—some by the river, and others by the land; while of those that remained, the boldest were appalled “for a time.” *No man is brave on all subjects*; and I have seen the stoutest heart, one that would have braved death at the cannon’s mouth, quail beneath the loathsome aspect and horrid lineaments of this messenger of death.

I have already remarked, that the disease was generally preceded by the premonitory diarrhœa. It would be more correct to indicate this as one of the forms of cholera; but because of its so frequently running into the aggravated condition, it has been considered as premonitory merely: existing for six months in some instances, in others, it has appeared only a few hours before the disease was fully developed. When rapid in its progress, or when it is about terminating in the confirmed disease, it is very peculiar in its character; there is no griping or tenesmus, no pain in the bowels, either when the evacuations take place, or at any other time. When the patient rises to the vessel, there is one sudden discharge of fluids, and all desire for evacuation is over for the time. The next most frequent premonition was afforded by

the disordered condition of the senses of seeing and hearing; but many had these who never had any other symptoms of the disease; and I am disposed to think, that when they appeared alone, they constituted the mildest form of attack. The next in frequency, but by far the most certain premonitory symptom, was the *numbness of the extremities*—that feeling which is produced by impeding the passage of nervous influence. I was in the habit of calling this the *remote* premonitory symptom, because when it appeared, it was generally several days before diarrhœa, or any other symptom. The bowels might be regular, the appetite and sleep good, and the pulse unaltered, and yet this symptom invariably led to the confirmed disease, if unattended to. In some attacks all of these symptoms were present or appeared in quick succession: in a few others, none of them, so far as I could learn, and these generally assumed the form of bilious colic. But to speak correctly, any derangement of health, at this time, should be ranked among the premonitory symptoms; whether it be diarrhœa—or constipation—voracious or diminished appetite—vertiginous senses—or morbid sensations in the extremities—dysentery, or some form of fever.

The rapidity, with which these symptoms, or initiatory stages, led to the disease in full formation, was exceedingly different. I have seen fever terminate in cholera in thirty-six or forty-eight hours. The diarrhœa was sometimes, in a few hours, followed by prostration of strength, cold extremities, pulselessness, and death. I never saw vomiting in a single instance without the antecedent diarrhœa; nor do I remember to have seen even nausea, except under the same circumstances. I need not dwell minutely upon the symptoms of this strange malady. No person of ordinary sagacity, unless blinded by prejudice, can fail to recognize the first case that may be presented to him. To my mind, however, the diarrhœa, the vomiting, or the cramps, are not more distinctive than the cold, and corrugated, and doughy condition of the integuments; the feeble, vacillating and evanescent pulse, and the peculiarly unpleasant alteration of the



voice. This is so different from health, or the change which it undergoes in any other disease, that it cannot be mistaken, and once heard, it can never be forgotten. The countenance may not always become angular and attenuated; the eyes may not in every instance be drawn into the socket, as if by the pulling of the optic nerve; but this change of voice has never been absent when collapse, or a tendency to it, comes on. In many cases, the conjunctiva was highly injected with blood; in some there were blotches, like ecchymoses, generally florid, but occasionally of a dark purple hue, in the lower portion of that membrane. In one case, about terminating fatally, I observed the cornea with a line drawn across its lower segment as if seared with a hot wire. In another case, of consecutive form, however, the whole lower portion of the cornea was in a sloughing condition. The strength is sometimes astonishingly preserved, and the intellects remain clear to the last. Dr. Ridgely told me, that on visiting a patient, he found him sitting up in bed, with his spectacles on, and a newspaper in his hand. *He was reading the Report of Cholera! He had no pulse, and his extremities were of an icy coldness.*

Of the pathology of this singular malady, I know but little more than the morbid secretions indicate. The liver is torpid; the kidneys are equally so; the capillaries of the stomach and bowels are highly excited, and pour out abundantly the peculiar fluid which is discharged by vomiting and purging; the capillaries of the skin are inactive, and a deficient secretion of heat is one of the results. In relation to this state of the surface, we observe one of those strange anomalies which puzzle and confound all our philosophy—the patient complains of heat, when to another his limbs are painfully cold. Of the state of the nerves, I know nothing; nor have the dissections here, so far as I know, established or removed one doubtful opinion on the subject of its pathology, or its treatment.

It would be an interesting subject of inquiry, to ascertain what organ, or set of organs, first took on disease. The mor-

bid sensations, to which I have frequently referred, would lead to the inference that the nervous tissue first suffered; but the brain, the centre of that system, is comparatively free from derangement of any sort. Of the abdominal viscera, the liver unquestionably first becomes diseased;—in a confirmed case the torpor is complete. The torpor of the kidneys seems connected with that of the liver. If only inebriates were liable to the disease, we would ascribe the torpor of these organs to excessive stimulation. But I am disposed to think that there is, even in health, a connexion between the functions of these organs, which has never been investigated with care. In disease we observe it in jaundice—and perhaps in diabetes—and it is certainly very apparent in the early, as well as the latter stages of ordinary fevers. However this may be in the present instance, it differs altogether from the PARURIA INOPS of Dr. Good.

The disease, in the state of its premonitory symptoms was generally easily cured, and by simple remedies. The spasms, when accompanied by a pulse strong enough to send the blood to the extremities, although they indicate a more severe form of the malady, are still curable. It is in collapse alone, that the resources of the art fail us, and the patient may be surrendered to his fate, without a departure from professional duty.

In the treatment of diarrhœa, you should have the feet bathed in hot water, rendered stimulating by the addition of salt or mustard: you should then order the patient to bed; have hot bricks applied to the extremities, to the small of the back, and to the pit of the stomach. He should be covered warmly, and when free from nausea he should drink abundantly of warm tea of any of the sudorific plants; some prefer eupatorium, but I have found equal advantages from balm or sage, or table tea. In addition to these means, if the deficiency of temperature be great, sinapisms are ordered to the extremities, to the small of the back, and if nausea exist, to the epigastrium, and indeed to the whole abdomen: to these are sometimes added pulverised capsicum; or they are



made more stimulating by being mixed up with spts. of turpentine, instead of hot water or vinegar. By all of these means, or such as you deem necessary in any particular case, you restore the heat of the surface, and produce a copious perspiration, which you keep up until the disease is brought under the control of medicine; which consists for the most part of some preparation of *mercury* and of *opium*—ten grains of calomel, and one of opium, repeated every hour until the discharges from the bowels were arrested; and the calomel alone, in ten grain doses, until free discharges of a thick consistence, and of a green or black colour, were brought off, rarely failed to subdue this form of the disease. Sometimes the liver would speedily take on this mode of action; but at others, its secretions would pass through many changes before they reached the green consistent stool, which was, ordinarily, the prelude to a healthy condition of this organ. Their transitions were very various; but the *lead* coloured stool generally semi-fluid, but sometimes firmer, and what I called the *charcoal stool*, rather thin, and having granules adhering to the surface of the vessel, resembling pulverized charcoal, were the most common. Any change from *white* to *green*, and from a condition of perfect *fluidity* to *consistence*, was favorable, and only required perseverance in the proper remedy to complete the cure. Sometimes, a single pill of calomel and opium was sufficient; but most frequently from sixty to one hundred grains of the former, and from two to six of the latter, were required. This, with such modifications as each physician preferred, has been the general practice here; and I have given into it; but a greater experience has convinced me, that a much less quantity of opium should be used; indeed, I am not sure that *any* is absolutely necessary, unless the spasms or cramps are present. Certain I am, that the congestion of the brain, so apt to occur after reaction takes place, is greatly aggravated by the opium.

But the diarrhœa is not an independent symptom. It is soon associated with others of a frightful character, and you have at the same time the cramps to contend with, and the

feeble circulation to excite. You then persevere in the calomel practice, while you stimulate the surface in the manner that I have mentioned, and resort to frictions, either with the warm hand of a strong and resolute assistant, or with folded flannel and stimulating embrocations; the best of which are spirits of turpentine, or strong mercurial ointment, pulverized capsicum and camphor; or capsicum, camphor, turpentine and sweet oil. These must be applied assiduously to all the cramped parts, taking care not to expose the patient by uncovering him or letting in cold air. You cannot dispense with frictions of some kind when the spasms exist, and yet I am compelled to say, they are of no avail unless you can stimulate the liver, to active and healthy secretion. In this aggravated condition this requires from ten to two hundred grains of calomel; and I always look upon it as a favorable sign, when all discharges ceased, for a few hours, under its administration; for if the remedy be persisted in, under these circumstances, the liver rarely failed to pour out an abundant green, gelatinous substance, such as we have been in the habit of seeing in the fevers of the West, for the last seventeen or eighteen years; this, though a morbid secretion, uniformly led to a healthy action of this organ, and whenever this took place, the patient was considered safe. There is nothing more inscrutable than the connexion between the torpid condition of the liver, and the feeble circulation; the cramps and the sero-albuminous discharges from the bowels, and the suppression of urinary secretion. And yet nothing is more true, than that so soon as this torpor is overcome, the cramps disappear—the circulation is invigorated—the skin becomes warm—the thin discharges cease—and the urine flows freely.

If nausea or vomiting existed in the early stages, I gave an emetic of a saturated solution of common salt. Some used the mustard emetic, but I preferred the salt and water, unless the patient was greatly prostrated. The eupatorium was also given by many as an emetic; but either of the others are better in my opinion. I did not give the ipecacuanha at

all. In one case I administered the antimonial wine, but I was not pleased with it, although the patient recovered. The advantages of an emetic, when nausea or vomiting existed, were very striking, (particularly of the salt emetic, concerning which my experience was considerable;) it threw off the contents of the stomach, and restored it to a quiet condition, in which it would for an hour or two, bear any medicine which the farther treatment of the disease rendered expedient. This was the golden period for the administration of calomel, or if preferred, calomel and opium. Sometimes I have given ʒss. or even ʒj. at a dose, and have been greatly pleased at the result. Indeed, I incline more and more to the opinion, that all you deem necessary in the case should be given at a *single dose*. Some added to the calomel and opium a grain or two of capsicum, and a few grains of camphor; but I do not admire either addition, unless under circumstances, that would, in other diseases call for these remedies. I expected nothing more from the emetic, than what I have stated. I did not look to it as a means of rousing arterial action, and preparing the system for the use of the lancet; I confess I observed no such effects. On the subject of bleeding generally, my rule of practice was extremely simple; I was governed by the same indications which apply to this remedy, in other diseases. When the pulse is strong, no matter what its velocity, infinite benefit is derived from the lancet: when indistinct, feeble, and vacillating, it hurries on the fatal issue. I was always delighted, when I found a pulse that would justify the use of this instrument. But I bled to *reduce*, not to *increase* arterial action. For the removal of the *numbness*, free purgation with calomel was indispensable; without this, frictions did no good. In this condition I bled more freely than in any other, except when cramps were accompanied with *strong pulse*—a case of great apparent danger, but one which yields readily and beautifully to the lancet and calomel.

I have seen several attacks in the form of *bilious colic*.—But although the symptoms are different, the disease and the

remedies are the same. The liver is torpid—the kidneys are inactive—and the spasms implicate some portion of the alimentary canal. *You bleed when you can.* In one case, which I saw in consultation, I concurred with the attending physician in advising the lancet. In one other, which occurred in my own practice, near one hundred ounces of blood were drawn; in another not a drop; and yet all of the three recovered. In all such cases I resorted to calomel in large doses, not forgetting the opium, which seemed demanded by the intolerable agony of the patients.

Vomiting, though a prominent, was generally the most easily subdued of all the symptoms of cholera. An emetic—a large dose of calomel, with or without opium—a sinapism to the epigastric region, or to the spine—quietude—withholding all manner of drinks, rarely failed. Some used ether, laudanum, &c., but I scarcely ever gave them. When these means failed, and they sometimes did, I have seen ten grains of quinine, two or three grains of camphor, and one third, one fourth, or one fifth of sulph. of morphia every two hours, succeed to admiration. At other times, calomel in 3ss. or or 3j. doses quieted this organ completely. To this some add African pepper and camphor, but I like them not. When, however, this organ remains irritable, with a constipated condition of the bowels, a condition which sometimes springs up, when the diarrhœa has been arrested, I have succeeded in quieting it, and operating finely upon the bowels, by giving, in small portions at a time, a saturated solution of sulph. magnesiae. For the removal of the irritable stomach with constipation of the bowels, I know nothing half so good after the free administration of calomel.

I was often asked what modification of treatment is necessary in pregnant or menstruating females? Would you give calomel, and blister, and bleed, and resort to frictions, &c. as freely as in others? Certainly. I knew no modifications which those conditions demanded. Nor did I see any danger, which resulted from the use of these Herculean remedies. As I have said, I saw no case in which any tendency

to abortion took place, although I saw one pregnant woman who died with the disease. And as to those who were menstruating, whether this discharge were really menstrual, or a mere hæmorrhage from the uterus, it demanded no remedy but calomel, and the lancet; for, as I now remember, all who were in this condition had an active well developed pulse.

When the case was one of ordinary fever, as it would seem, the lancet was eminently demanded, and if used freely, with proper purgation, it continued a case of fever until convalescence; but if the lancet were neglected, it sometimes ran rapidly into the collapse of cholera. I think I lost a little child from neglecting the lancet and relying altogether on purgatives.

In a disease so rapid in its progress, you cannot wait to see the effect of one remedy, before you resort to another: on the contrary, you are compelled to carry on, at the same time, all of the compatible modes of cure. Thus you administer calomel, and, simultaneously, excite the extremities, by sinapisms, the spine by blisters, (a most excellent expedient, and one that I recommend to your special consideration,) the whole surface by frictions and stimulating embrocations, by hot applications, warm covering, and warm sudorifics, when the stomach will bear them: for this latter object, I have sometimes used warm brandy toddy, well spiced or peppered, with decided advantage.

You cannot, in every case, dispense with the purgatives, which are ordinarily given, as adjuvants to calomel. When this has excited the liver, but, at the same time, acts slowly and inefficiently on the bowels, you give the castor oil—Rochelle salts—magnesia and charcoal, or rhubarb and magnesia—or the vegetable cathartics—avoiding, however, those that are apt to produce the watery passages. I saw a fatal case of cholera, which was certainly excited by a dose of cream of tartar and jalap, administered by the family. Some prescribed the Croton oil, and admired it much. I gave it on several occasions. In one obstinate case of *cholérique colic*, I gave twelve or fifteen drops in all, with good results;



but generally its action was so harsh, that I was displeased with it; and now I rarely prescribe more than the fourth or fifth of a drop, in combination with calomel, or rhubarb, aloes and scammony. I recommend this last combination as furnishing the best purgative pill I have ever tried.

Thus you see, that the same principles govern us in the treatment of cholera, which direct us in other maladies. Indeed, I have long since discarded the idea, that there is any thing peculiar in this disease, which throws it out of the pale of regular practice. The *cramps*, I saw in diarrhœa, twenty years ago. The *collapse*, the most horrible feature in it, does not differ essentially from the same state as the *termination* of the malignant fevers of Green river, and when I first saw it here, I told my friends, that I had seen it before. The combination of these, and other ominous symptoms, in a single case, and the *suddenness* with which *collapse* supervened, constituted the only difference. But when it comes on, all the stimulants of the alembic cannot avert, for one moment, the fatal issue. Indeed, I have remarked here, as elsewhere, that the spark of life was suddenly extinguished by the free administration of stimulants internally. You can do nothing to *cure* this state, though you may do much to *avert* it. I will not say you can always avert it, even when called at the earliest ascertained period of attack; some cases are so insidious, being apparently mild, when in reality they are of the most malignant character, that the patient is hurried into a hopeless condition before you are aware of it; and I have certainly seen some cases, in which the first indication of danger was, at the same time, an indication of approaching death. I know that medical Reporters conceal these things, and boast of their uniform success; but deeming truth of more value than the ephemeral honor of curing all *on paper*, I am compelled to acknowledge, that I have lost several, to whom I was called before collapse took place. And yet, some will tell you, they have cured patients who were in a collapsed condition! They attach a different meaning to the term from that which I affix to it.



Astringent injections, to restrain the diarrhœa, were, by some of my friends, thought worthy of confidence, but they should be considered merely as temporary expedients, to gain time for the calomel to exert its specific influence on the liver. *Calomel is the best astringent.* Diuretics have been depended on by some of our physicians, as I have been informed; the secretions of the kidneys following readily the fate of the more important viscera, are not to be restored until they are corrected. I have heard of tobacco injections having been used in two cases, but they eventuated badly. The cold affusion was employed in a collapsed case, but of course, without any benefit. I have understood, that the veins were injected in one case, but without averting the fatal issue. Stephens's Powders have been tried with no success, though not, perhaps, with proper care or discrimination. Phosphorus has been used in the collapsed condition, but it is entitled to no confidence in that or any other stage of cholera. I was called to several patients, who had placed themselves under the camphor treatment, according to the newspaper account it. It is worthy of no confidence as the sole remedy; though unquestionably, as one of the agents to which we should occasionally resort, it is not to be overlooked. But the more I know on the subject, the more I am convinced, that we should discard all *nostrums*, and prescribe for the condition of the system, just as in any other disease.

It has rarely fallen to my lot, to see any body recover from a violent attack speedily, as they are said to do in India. More or less of *consecutive disease* almost always attends the recovery from the real cholera symptoms. In one case, after all the prominent symptoms of cholera had been removed, I had left on my hands a case of *mania a potu*, which I cured by giving from twenty to thirty grains of opium in as many hours. In many cases, the consecutive form is of a mild grade, requiring merely attention to the regular daily evacuation of the bowels. But I need not amplify on this topic. You are to be governed by the condition of your patient. You are to forget that he had cholera, and interro-

gate the symptoms, and not the attendants. I have bled some in this stage, with as decided advantage as I ever used the lancet in my life. All have required free and active purgation, and have been improved by it; and counter irritation can never be dispensed with, when the brain is suffering, unless the symptoms yield readily to the lancet or purgatives. The treatment does not differ essentially from that which is successful in what is *called* typhus fever; this stage of disease being induced, as typhus fever ordinarily is, by more stimulation than the various organs, and more especially the brain, can bear with impunity.

Some look on ptyalism as not only a cure for the disease, but as a preventive of an attack. I have a few words to say on both of these opinions. As a means of cure, it cannot be relied on, for you cannot effect a salivation while the thin discharges continue; nor until after the green discharges have commenced flowing; that is to say, you cannot salivate until your patient is cured!—and then it is manifestly unnecessary. It is the action on the liver that is curative; and all beyond that, is, to say the least, unnecessary. But inasmuch as it is debilitating, it is detrimental. The induction of this state is to be avoided, therefore, as a positive evil, while we are to endeavour to bring about the changes in the liver, as the only means of cure. As a prophylactic it deserves but little consideration, as I saw one case of death and heard of others, in which the salivary glands were in a high state of excitement.

Relapses have been frequent, and convalescence slow and unsteady; more especially in the feeble and delicate, and others who had previously laboured under affections of the liver. But I know no facts in relation to either of these subjects, which would be particularly interesting to you. General treatment, with that salutary attention to regimen, which is found available after other diseases, is the only sure mode of preventing relapses, and advancing convalescence.

On the subject of preventive means, I think there is much parade of usefulness with but little real utility. Warm com-

fortable clothing, consisting of flannel next the surface, and of woollens generally; warm sleeping, whether on beds of down, or on some harder material; an abundance of good wholesome food, consisting of our favorite and native bacon, with that article which you of Kentucky know how to prepare better than almost any other people, renowned homminy, and fresh pure bread, whether of the Indian or the English corn; with those beverages which nature has prepared, milk and water, or those which are obtained by infusing the Arabian berry, or the Chinese leaf; together with such vegetables and fruits as are ripe and nutritious; all of course with that moderation, which becomes a people, who have been so long restrained; with attention to personal, domestic and city cleanliness; and constant, incessant and engrossing occupation:—these are the means, and, in my opinion, the only ones which deserve to be enforced, and the observance of which would be worth the trouble and expense.

In your state, however, a more general surveillance might be effected, and with manifest advantage. I would advise all masters and overseers to make it a morning and an evening duty to institute a minute inquiry into the condition of the alvine discharges of all under their care, and as soon as the slightest deviation from health is observed, active remediate treatment should be resorted to. Under such circumstances, a gentle emetic, or a single dose of calomel, would do more good than, twelve hours afterwards, the doctor with all his drugs and skill might be able to effect.

And if to these be added, a “a heart without fear and without reproach,” every thing will have been done, which human agency can effect, to avert the threatened calamity.

Hoping that the disease may pass lightly over you, I remain, dear sir,

Your friend and ob’t serv’t.

JOHN F. HENRY.

